IN THE CLAIMS:

1 – 13 (Cancel)

14. (New) A method for providing communication over a Time Division Multiplexed and Wavelength Division Multiplexed (WDM) packet-switched optical ring network having a plurality of nodes connected thereto, where some of the nodes service a plurality of users and at least one node couples a backbone ring of said network to a subtending ring of said network comprising the steps of:

creating, at node A of said backbone ring, a composite packet K that contains a plurality of constituent packets that are not constrained to all have a particular node of the backbone ring as a destination of the constituent packets;

applying the created composite packet to a first optical port of an element of node A that is capable of adding a composite packet to said backbone ring from said first optical port and concurrently dropping a composite packet from said backbone ring into a second optical port;

dropping from said ring network a composite packet that is destined for node A; and

routing said composite packet K over said backbone ring.

15. (New) The method according to claim 14 where said step of adding adds said composite packet K into an empty photonic time slot of said backbone ring.

16. (New) The method according to claim 14, further comprising the step of decomposing the dropped composite packet obtained from said second optical port into is constituent packets.

17. (New) The method according to claim 14, further comprising the step of decomposing the dropped composite packet into a partial composite packet that contains some of the packets constituting the dropped composite packet, and a set of remaining ones of the packets constituting the dropped composite packet.

18. (New) The method of claim 1 where said step of creating comprises:

generating within node A a plurality of packets, each packet having a different wavelength; and

stacking said plurality of packets in a time slot to form said composite packet.

19. (New) The method according to claim 14, wherein said element is an optical switch

20. (New) The method according to claim 14, wherein said dropped composite packet is distributed to a plurality of user sites that are coupled to node A via one of said subtending networks that is coupled to node A.

21. (New) The method according to claim 14 further comprising the step of unstacking the composite packet dropped by said step of dropping to form a set of individual packets, each at its own wavelength.

22. (New) The method according to claim 21 where the set of individual packets simultaneously appear at a set of outputs.

23. (New) The method of claim 21 where packets of the set of individual packets appear at an optical port sequentially in time.

24. (New) The method according to claim 14 where said creating a composite packet comprises the steps of:

accepting a set of packets P_j, arriving at times $T+j\Delta$, where index $j=0,1, 2,\ldots N$ and applying to each packet P_j, $j=0,1,2,\ldots N$, a delay of $(N-j)\Delta$, to obtain thereby delayed packets; and

combining the delayed packets to form said composite packet.

25. (New) A method for providing high connectivity communication over a packet-switched optical ring network having a plurality of nodes connected thereto comprising the steps, at one of said plurality of nodes, of:

(a) dropping from said ring network, in a photonic time slot, a composite packet that comprises at least a first set of constituent packets and a second set of constituent packets;

(b) unstacking the dropped composite packet to develop at least a first partial composite packet that contains said first set of constituent packets and a second partial composite packet that contains said second set of constituent packets;

(c) creating a composite packet from said second set of constituent packets contained in said second partial composite packet and from locally created packets having wavelengths that are different from wavelengths of packets in said second set of constituent packets; and

(d) adding the created composite packet to said ring network.

26. (New) The method of claim 25 where at least some of the steps are carried out by employing a plurality of fiber Bragg grating elements.

27. (New) The method of claim 26 where at least some of said fiber Brag grating elements are tunable.